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NEW PHALANGIDS FROM THE SOUTHWEST PACIFIC

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In this paper, the authors describe seven new species of phalangids from the Southwest Pacific island area and Australia.

Of especial interest to our understanding of the distribution of the family Phalangodidae was the discovery of two new species in the subfamily Erecananinae Roewer.

All holotypes but those in the Erecananinae are deposited in the collection of the American Museum of Natural History. The holotypes of the two new species of the Erecananinae are in the collection of the Chicago Natural History Museum; paratypes are in the collection of the American Museum of Natural History.

SUBORDER LANIATORES THORELL PHALANGODIDAE SIMON PHALANGODINAE ROEWER FOELLA, NEW GENUS

Dorsum with five areas, first area without a median line. Boundaries of the first and second areas not parallel, no dorsal armature present. Spiracles visible. Femur and patella of palpus each with an apical median spine. First segment of chelicera without a dorsal elevation. Tarsal segments: 3-5-5-6. Distitarsus of first tarsus with two segments, second with three. Eye tubercle located on the anterior margin of the cephalothorax, without dorsal armature.

Genotype: Foella remingtoni, new species.

This genus is related to Zalmoxis Soerensen, differing by having

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the eye tubercle on the anterior margin of the cephalothorax instead of removed.

Foella remingtoni, new species

Figures 7-8

HOLOTYPE: Total length of body, 1.4 mm. Cephalothorax, 0.4 mm. Width of body at widest portion, 0.8 mm.

| | I | II | III | IV |
|------------|----------|----------|----------|----------------------|
| Trochanter | 0.1 mm. | 0.1 mm. | 0.1 mm. | $0.1 \mathrm{mm}$. |
| Femur | 0.4 | 0.5 | 0.4 | 0.5 |
| Patella | 0.2 | 0.2 | 0.2 | 0.3 |
| Tibia | 0.2 | 0.4 | 0.3 | 0.4 |
| Metatarsus | 0.2 | 0.4 | 0.3 | 0.5 |
| Tarsus | 0.3 | 0.5 | 0.3 | 0.4 |
| | | | | |
| Total | 1.4 mm. | 2.1 mm. | 1.6 mm. | 2.2 mm. |

Cephalothorax smooth except for two very minute tubercles at the lateral portion. Eye tubercle low, rounded, unarmed, and situated on the anterior margin of the cephalothorax. Cephalothorax separated from the abdomen by a conspicuous groove. Abdominal scute with five areas, each of which is separated by a well-defined groove. First area without a median line, boundaries of areas slightly bowed. In this way, the boundary of the second area is not parallel to that of the first. Entire dorsum without armature, but entire body, including the cephalothorax and eye tubercle, thickly covered with minute pits which give the entire surface a shagreened appearance. Lateral margin of abdominal scute with a single row of minute granulations. Each free tergite with a similar row of granulations. Anal operculum with a few small granulations. Each free sternite with a transverse row of small granulations. Third coxa with an anterior and posterior row of teeth, apical portion of fourth coxa with tuberculations, some of which are visible dorsally. Spiracles hidden. Fourth coxa not much enlarged.

Legs clothed throughout with hairs, unarmed, but with the same minute pits present on the dorsum. Trochanters globular. Metatarsi not divided into astragali and calcanea. Tarsal segments: 3-5-5-6. Distitarsus of first tarsus with two segments, second with three.

Palpus: trochanter, 0.1 mm. long; femur, 0.3; patella, 0.2; tibia, 0.2; and tarsus, 0.2. Total length, 1 mm. Palpus armed

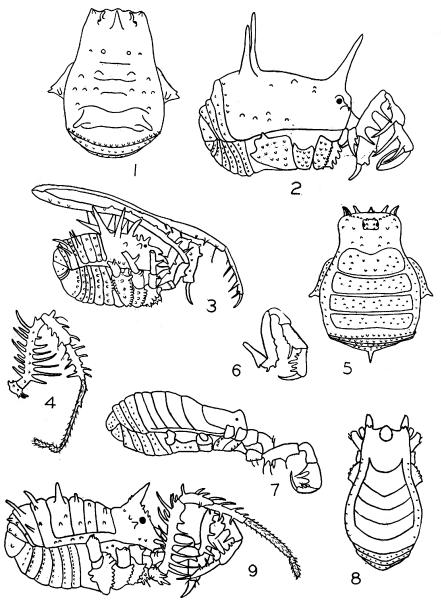


Fig. 1. Philibalonius dubius, new species, dorsal view of holotype.

- Fig. 2. Idem, lateral view of holotype.
- Fig. 3. Paralomanius longipalpus, new species, lateral view of male holotype.
- Fig. 4. Idem, retrolateral view of first leg of holotype.
- Fig. 5. Anjolus malkini, new species, dorsal view of holotype.
- Fig. 6. Idem, retrolateral view of palpus of holotype.
- Fig. 7. Foella remingtoni, new species, lateral view of holotype.
- Fig. 8. Idem, dorsal view of holotype.
- FIG. 9. Paralomanius brevipalpus, new species, lateral view of female holotype.

retrolaterally as in figure 7. Prolaterally, the femur and patella each with an apical median spine. Tibia and tarsus armed as on the retrolateral side.

Chelicera normal, with scattered hairs, smooth except for a few anterior tubercles on the second segment. First segment without a dorsal elevation.

Entire animal light reddish yellow. Appendages lighter, eyes black.

Type Locality: Holotype from 7 miles south of La Foa, New Caledonia, March 11, 1945 (C. L. Remington).

Zalmoxis darwinensis, new species

Figure 11

MALE HOLOTYPE: Total length of body, 3 mm. Cephalothorax, 0.8 mm. Width of body at widest portion, 1.9 mm.

| | I | II | III | IV |
|------------|---------|------------------------|----------|----------------------|
| Trochanter | 0.2 mm. | $0.3 \; \mathrm{mm}$. | 0.3 mm. | $0.5 \mathrm{mm}$. |
| Femur | 0.7 | 1.1 | 0.9 | 1.4 |
| Patella | 0.4 | 0.5 | 0.4 | 0.8 |
| Tibia | 0.5 | 1.0 | 0.7 | 1.2 |
| Metatarsus | 0.8 | 1.2 | 1.0 | 1.2 |
| Tarsus | 0.6 | 0.8 | 0.5 | 0.6 |
| • | | | | |
| Total | 3.2 mm. | 4.9 mm. | 3.8 mm. | 5.7 mm. |

Anterior margin of cephalothorax with two spinulates at the lateral margin. Eye tubercle removed from the anterior margin of the cephalothorax, rounded with four small spines above. Abdominal scute with five areas, the boundaries of which are bowed. First area without a median line. First and second areas only granulate, with a few larger granulations in the median portion. Third and fourth areas covered with small tuberculations which in many specimens are enlarged into a median pair of tubercles. Lateral margin of scute without a row of tubercles. Fifth area and each free tergite with a transverse row of small spines. Anal operculum thickly covered, both dorsally and ventrally, with small spines. Each free sternite with a transverse row of tubercles which are larger on the posterior sternites. Genital operculum and coxae granulate. Third coxa with anterior and posterior rows of teeth, dorsal and lateral portions of fourth coxae with heavy tuberculations. Spiracle hidden.

Legs clothed throughout with hairs, all segments but the tarsi

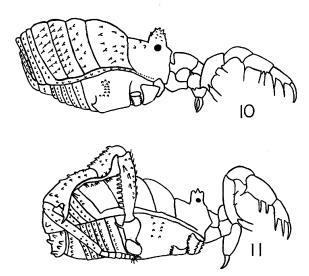


Fig. 10. Zalmoxis tuberculata, new species, lateral view of male holotype. Fig. 11. Zalmoxis darwinensis, new species, lateral view of male holotype.

with tuberculations. Trochanters globular, fourth with a spine on the posterior margin. The tuberculations become heavier and enlarge into spines on the very heavy fourth leg. Fourth femur with a posterior row of four or five spines. Entire fourth femur thickly covered with heavy tubercles. Patella and tibia similarly armed. Distal third of fourth tibia with a very heavy prominent spine. This spine is tuberculate and in many specimens has an enlarged tubercle in the middle portion, at times making the spine appear nearly bifid. Tarsal segments: 3-5-5-6. Distitarsus of first tarsus with two segments, second with three.

Palpus: trochanter, 0.3 mm. long; femur, 0.4; patella, 0.3; tibia, 0.4; and tarsus, 0.4. Total length, 1.8 mm. Palpus armed retrolaterally as in figure 11. Prolaterally, the femur and patella each with a median apical spine. Tibia and tarsus armed as on retrolateral side.

Chelicera normal, with scattered hairs. Proximal segment with a slight dorsal elevation.

Entire animal reddish brown with much darker brown mottling on the dorsum. Proximal segments of the legs darker brown. Palpus and chelicerae lighter, with mottlings.

FEMALE: Total length of body, 3 mm. Cephalothorax, 0.7 mm. Width of body at widest portion, 2 mm.

Similar in appearance to the male, but the spines of the fourth leg are somewhat reduced.

Type Locality: Male holotype and male and female paratypes from Darwin, Australia, February 9–13, 1945 (Borys Malkin).

Zalmoxis darwinensis is related to Zalmoxis australis Soerensen. It differs by not having any tubercles on the lateral margin of the dorsal scute; Z. australis has two rows. Z. darwinensis has two spines on the anterior margin of the cephalothorax, whereas Z. australis has none.

Zalmoxis tuberculata, new species

Figure 10

MALE HOLOTYPE: Total length of body, 2 mm. Cephalothorax, 0.6 mm. Width of body at widest portion, 1.7 mm.

| | I | II | III | IV |
|------------|----------|----------|----------|---------------------|
| Trochanter | 0.2 mm. | 0.2 mm. | 0.2 mm. | $0.4~\mathrm{mm}$. |
| Femur | 0.6 | 0.9 | 0.7 | 1.0 |
| Patella | 0.3 | 0.4 | 0.3 | 0.5 |
| Tibia | 0.4 | 0.8 | 0.6 | 0.8 |
| Metatarsus | 0.6 | 0.8 | 0.7 | 1.0 |
| Tarsus | 0.5 | 0.9 | 0.5 | 0.5 |
| | | | | |
| Total | 2.6 mm. | 4.0 mm. | 3.0 mm. | 4.2 mm. |

Body pyriform in shape, cephalothorax with a few scattered granulations and several tuberculations posterior to the eye tubercle. Anterior margin of cephalothorax with three small spines on each side. Eye tubercle clearly removed from the anterior margin of the cephalothorax, eyes at the base. Entire eye tubercle covered with tuberculations which project above as in figure 10. Abdomen with five distinct areas, all covered with hair-tipped tubercles which are more or less arranged in rows. The hairs on the tubercles slant posteriorly. First area without a median line, and somewhat wider than the remaining areas. Posterior boundaries of first to fourth areas bowed. margin of scute with a single row of tuberculations. Each free tergite with a transverse row of hair-tipped tubercles. Each free sternite with a transverse row of hair-tipped tubercles. Anal operculum thickly tuberculate. Coxae granulate, third coxa with an anterior and posterior row of teeth. Spiracles visible, but partially hidden by projections from the first free sternite. Fourth coxa thickly covered with hair-tipped tubercles.

Legs clothed throughout with hairs. First to third femora with

small granulations. Fourth femur enlarged and covered with hair-tipped granulations, with four or five small spines on the posterior margin. Patella, tibia, and tarsus of fourth leg somewhat enlarged and with hair-tipped granulations. Tarsal segments: 3-5-5-6. Distitarsus of first tarsus with two segments, second with three. Metatarsi not divided into astragali and calcanea.

Palpus: trochanter, 0.2 mm. long; femur, 0.5; patella, 0.2; tibia, 0.3; and tarsus, 0.3. Total length, 1.5 mm. Palpus armed retrolaterally as in figure 10. Prolaterally armed as follows: femur and patella each with an apical median spine; tibia with three spines; tarsus with two.

Chelicera normal. Proximal segment with a small, smooth, dorsal apical elevation. Distal segment with scattered hairs.

Dorsum reddish brown with much darker brown mottling, particularly on the abdomen and anal operculum. Venter lighter, legs light yellowish with two dark brown bands on the femur, one on the patella, two on the tibia, and two on the metatarsus, giving an annulate appearance to the legs. Palpus likewise appearing annulate, with a darker brown femur, tibia, and distal tip to the tarsus. Chelicera mottled.

Female: Total length of body, 2.6 mm. Cephalothorax, 0.6 mm. Width of body at widest portion, 1.7 mm.

Similar in appearance to male.

TYPE LOCALITY: Male holotype and one paratype from La Foa, New Caledonia, March 7, 1945 (C. L. Remington). One immature paratype from same locality, March 31, 1945 (C. L. Remington).

In the immature specimen, the median tubercles of the free tergites are somewhat enlarged.

 $Zalmoxis\ tuberculata$, new species, is related to $Z.\ austera$ Hirst; however, the number of segments in the second tarsus differs, and the eye tubercle is of a different form.

IBALONIINAE ROEWER

Philibalonius dubius, new species

Figures 1-2

HOLOTYPE: Total length of body, 3.1 mm. Cephalothorax, 1.2 mm. Width of body at widest portion, 2.6 mm.

Cephalothorax with a large straight spine between the eyes. Eyes widely separated, with several small tubercles over each

| | I | II | III | IV |
|------------|---------|----------------------|----------------------|----------------------|
| Trochanter | 0.4 mm. | $0.5 \mathrm{mm}$. | $0.5 \mathrm{mm}$. | $0.5 \mathrm{mm}$. |
| Femur | 2.0 | 8.6 | 5.6 | 7.9 |
| Patella | 0.5 | 1.0 | 0.8 | 1.0 |
| Tibia | 1.6 | 7.7 | 3.3 | 4.8 |
| Metatarsus | 2.1 | 8.0 | 5.7 | 9.1 |
| Tarsus | 0.8 | 2.4 | 0.8 | 1.0 |
| | | | | |
| Total | 7.4 mm. | 28.2 mm. | 16.7 mm. | 24.3 mm. |

carina. The anterior pointing tubercle of the carina is larger and almost connects with a small spine on the anterior margin of the cephalothorax. Anterior lateral margin of cephalothorax with several tubercles. Near the posterior margin of the cephalothorax is a pair of enlarged tubercles. The first area of the abdomen without a median line, with a median pair of enlarged tubercles and a pair of small lateral ones. Second area narrow, irregular in outline, with a transverse row of six small tubercles. with a pair of very small tubercles in the median portion, small lateral tuberculations also present. These median tubercles do not appear to be median armature. Fourth area with a pair of large divergent spines. Fifth area with a transverse row of very small granulations. Lateral margin of the scute with a row of small tubercles. Each free tergite with a transverse row of very small tubercles. Anal operculum smooth. Free sternites each with a transverse row of small tubercles. Coxae thickly covered with small tubercles. These are larger on the first coxa, which is very reduced in width. Spiracles visible. Fourth coxa with a dorsal spine; second coxa covered with a glandular secretion.

Legs clothed throughout with hairs. A few small scattered tubercles on the first trochanter. Legs without armature except for the first femur which has several very small hair-tipped tubercles. Dorsally the femur is unarmed. Tarsal segments: 4-10 to 12-5-5. Distitures of first tarsus with two segments, second with three. Third and fourth tarsi with thick scopulae, claws smooth.

Palpus: trochanter, 0.4 mm. long; femur, 0.9; patella, 0.7; tibia, 0.7; and tarsus, 0.5. Total length, 3.2 mm. Palpus armed retrolaterally as in figure 2. Prolaterally armed as follows: femur with an apical median spine; patella with two spine-tipped tubercles, one of which is apical median in position; tibia with three spines; tarsus with two large tubercles and some small granulations.

Chelicera with the proximal segment smooth except for a few tubercles on the prolateral margin. A small dorsal elevation present on the proximal segment. Distal segment with an anterior row of small spines and a larger posterior spine. Claws long and curved.

Dorsum dark brown, with lighter mottlings on the cephalothorax. These mottlings extend in an irregular line on the first area. Venter dark reddish brown; appendages somewhat lighter, with chelicera and palpus mottled.

Type Locality: Holotype and two paratypes from the Russell Islands, January, 1945 (R. B. Eads).

This animal is placed in the genus *Philibalonius* although there do appear to be paired tubercles on the first area. *Philibalonius bakeri* Roewer does have a transverse row of tubercles on the first area, so the appearance of paired tubercles may be simply a matter of degree.

ERECANANINAE ROEWER PARALOMANIUS, NEW GENUS

Dorsum with five poorly defined areas; first area without a median line. Boundaries of areas parallel, median paired spines on the fourth area. Remaining areas and free tergites without median armature. Eyes not on a common tubercle, but anterior to each a ridge or keel which extends to the anterior margin of the cephalothorax. Spiracles hidden. Tarsal segments: 2-2-5-5. Distitarsi of both first and second tarsi with but one segment.

GENOTYPE: Paralomanius longipalpus, new species.

Paralomanius is related to *Erecanana* Strand. It differs in the form of the eye tubercle and the spination of the dorsum.

Paralomanius longipalpus, new species

Figures 3-4

MALE HOLOTYPE: Total length of body, 2.1 mm. Cephalothorax, 1 mm. Width of body at widest portion, 1.6 mm.

Eyes not on a common tubercle. Above each carina two small spines. Anterior to each eye a ridge or keel which extends to the anterior margin of the cephalothorax where it joins two large, forward pointing spines. Posterior to each eye is a small spine; posterior to this spine, three large spines with a large posterior pointing spine between the last spine of each side. In all there

| | I | II | III | · IV |
|--------------|------------------------|----------|---------------------|---------|
| Trochanter - | $0.3~\mathrm{mm}$. | 0.3 mm. | 0.4 mm. | 0.4 mm. |
| Femur | 1.3 | 3.5 | 2.2 | 3.1 |
| Patella | 0.5 | 0.6 | 0.5 | 0.5 |
| Tibia | 0.8 | 3.2 | 1.6 | 2.3 |
| Metatarsus | 1.3 | 2.7 | 2.1 | 3.1 |
| Tarsus | 0.4 | 0.9 | 0.4 | 0.4 |
| | | | | |
| Total | $4.6 \; \mathrm{mm}$. | 11.2 mm. | $7.2 \mathrm{mm}$. | 9.8 mm. |

are seven large spines arranged in an elongated triangle. The area between the spines is smooth. Lateral portion of cephalothorax roughly granulate, with irregular tuberculations near the The large spines are all on the cephalothorax. Anterior margin of the cephalothorax with a projection between the chelicerae. Abdomen with five poorly defined areas, first without a median line. Areas narrow, dorsal abdominal scute granulate. A row of transverse tubercles across each area, a median pair of robust spines on the fourth area. Lateral margin of abdominal scute smooth. First free tergite with a transverse row of five spines, the three median ones are larger, the lateral ones small. Second and third free tergites each with a transverse row of small tubercles. Anal operculum smooth. Coxae and sternites granu-A transverse row of small tuberculations across each free Each coxa with an anterior row of teeth, fourth coxa with posterior teeth which with the tuberculations from the first free sternite hide the spiracle. Fourth coxa with a large apical anterior spine.

Trochanters of legs II to IV with scattered tuberculations. These are enlarged into spinules at the apical portion of the third and fourth trochanters. Femora straight, third femur with an anterior pointing proximal spine. Basal portion of second femur with a median spine. Patellae II, III, and IV each with an apical median spine. Legs II to IV with scattered hairs, otherwise unarmed. Leg I heavily armed as in figure 4. Femur of leg I unarmed medially; patella and tibia armed medially with spines which are visible in the figure. Tarsal segments: 2-2-5-5. Distitarsi of both first and second tarsi with but one segment. Tarsi without scopulae or false claws. Third and fourth double claws smooth.

Palpus: trochanter, 0.5 mm. long; femur, 3.4; patella, 3.3; tibia, 0.8; and tarsus, 1.0. Total length, 9 mm. Palpus elongated. The femur and patella are extremely elongated and are

carried over the back of the animal. The remaining segments are of normal length. Palpus armed retrolaterally as in figure 3. Prolaterally armed as follows: femur unarmed, hence without apical median or dorsal median spine; patella with an apical median spine; tibia and tarsus armed as in retrolateral view.

Chelicera having the proximal segment elevated dorsally. With scattered tubercles, two small tubercles on the medial surface, and three very small ones on the ventro-lateral surface. Distal segment as in figure, without conspicuous median armature.

Entire body reddish brown, with much dark mottling on the dorsum. Legs yellowish with dark brown bands which give an annulate appearance. Patella dusty yellow, lighter in the distal segments. Chelicera mottled yellow and brown.

Type Locality: Male holotype from Peleliu Island, Pelew Islands, August 12, 1945 (H. Dybas). Paratypes from Peleliu Island, Pelew Islands, August 12, 1945, August 3, 1945, and from Garakayo Island, Pelew Islands, August 6, 1945 (H. Dybas).

Paralomanius brevipalpus, new species

Figure 9

Female Holotype: Total length of body, 2.2 mm. Cephalothorax, 1.1 mm. Width of body at widest portion, 1.6 mm.

| • | I | II | III | IV |
|------------|---------|-------------|----------|---------|
| Trochanter | 0.3 mm. | 0.3 mm. | 0.2 mm. | 0.4 mm. |
| Femur | 0.9 | 2.7 | 1.9 | 2.6 |
| Patella | 0.4 | 0.5 | 0.4 | 0.5 |
| Tibia | 0.7 | 2.6 | 1.4 | 2.0 |
| Metatarsus | 1.0 | 2.2 | 1.8 | 2.5 |
| Tarsus | 0.4 | 0.8 | 0.3 | 0.3 |
| | | | | |
| Total | 3.7 mm. | 9.1 mm. | 6.0 mm. | 8.3 mm, |

Cephalothorax covered with numerous scattered tubercles, eyes separated, without median tubercle. Each eye with a small, posterior pointing spine above. Median spine between the eyes. This spine is straight and points slightly anteriorly; its base on an elevation which is tuberculate. A larger tubercle at the posterior side of the base of the spine. From the spine a row of small tubercles on either side slants towards the lateral margin. This leaves a broad inclined triangle in the frontal portion of the cephalothorax. This area is completely smooth. Anterior lat-

eral margin of the cephalothorax with several enlarged tubercles. Abdominal scute with five areas, the boundaries of which are somewhat irregular. First area without a distinct median line, although there is a slight depression in the median portion of the second area which extends into the first. Entire dorsum granulate and with a number of larger tubercles. These tubercles are connected by an interlacing series of ridges which give an irregular appearance to the surface. Fourth area with a median pair of large spines. Fifth area with a transverse row of spines and tubercles, the median one of which is conspicuously larger. Lateral margin of scute with an irregular row of small tubercles. Each free tergite with a transverse row of four or five spines, those of the first free tergite being very large. Dorsal portion of anal operculum with a cross row of three tubercles. Free sternites with only a transverse row of granulations. Genital operculum smooth. Surface of coxae with scattered tubercles, some arranged on the posterior and anterior margins. Coxae cut off proximally so as to make a deep depression anterior to the genital operculum. Spiracles hidden by tubercles from the free sternites. coxa with a large anterior distal spine.

Trochanters with tuberculations, several spines on all. Basal portions of femora II to IV with a division ring. Femora II and III each with a spine near the base. Patellae II and IV with dorsal sharp spines. Remainder of legs with scattered hairs. First leg heavily armed as in figure 9. Prolaterally, the first leg also has four spines on the patella; the tibia has three spines. Tarsal segments: 2-2-5-5. Distitarsi of both first and second tarsi with but one segment. Third and fourth tarsi smooth, without scopulae.

Palpus: trochanter, 0.3 mm. long; femur, 0.8; patella, 0.9; tibia, 0.5; and tarsus, 0.6. Total length, 3.1 mm. Palpus armed retrolaterally as in figure 9. Prolaterally armed as follows: femur with an apical median spine; patella with three spines, one of which is apical median in position; tibia with three; tarsus with three. Tarsal claw extended straight.

Chelicera normal, with scattered hairs. Dorsal portion of proximal segment smooth, slightly elevated. Anterior part of second segment with a row of small, hair-tipped tuberculations. First segment with two very small tubercles on the lateral margin and one on the median.

Dorsum dark brown, margins lighter. Anterior portion of

cephalothorax, spine, and large spines of the abdomen pale. Second to fourth legs light, with alternating bands of dark brown. First leg, palpus, and chelicerae mottled light and dark brown.

Type Locality: •Female holotype from Peleliu Island, Pelew Islands, August 5, 1945 (H. Dybas). Paratypes from same locality, August 1, 2, and 5, and July 29, 1945 (H. Dybas). Additional paratypes from Garakayo Island, Pelew Islands, August 6 and 8, 1945 (H. Dybas).

Paralomanius longipalpus and brevipalpus are closely related species. The chief difference is in the relative length of the palpus; also the spines between the eyes differ considerably in appearance.

ASSAMIIDAE SOERENSEN ERECINAE ROEWER ANJOLUS, NEW GENUS

Eye tubercle with paired spines. First area of the dorsal scute without a median line. All areas without median armature. First and second free tergites without armature, third free tergite with a median spine. Anal operculum with a median tubercle. Prolaterally femur of the palpus without apical median armature. Fourth coxa without lateral dorsal spine. Tarsal segments: 4-more than 6-5-6. Distitarsus of first tarsus with two segments, second with three.

GENOTYPE: Anjolus malkini, new species.

This genus is related to *Parapygoplus* Roewer. *Anjolus* differs considerably by having low spines over the eye tubercle, no paired spines on the fifth area, and a median spine on the third free tergite.

Anjolus malkini, new species

Figures 5-6

HOLOTYPE: Total length of body, 2.9 mm. Cephalothorax, 0.9 mm. Width of body at widest portion, 2.8 mm.

Cephalothorax granulate, with a few scattered tuberculations. Eye tubercle with three small spines over each carina, the median one of which is the largest. This median larger spine is the paired spine mentioned in the generic description. Cephalothorax without an anterior projecting spine. Spines under the anterior margin: 3:1:3. Spines all of equal length, those two

| | I | II | III | IV |
|------------|----------|----------|----------|----------|
| Trochanter | 0.4 mm. | 0.4 mm. | 0.4 mm. | 0.4 mm. |
| Femur | 1.5 | 2.5 | 1.9 | 2.7 |
| Patella | 0.5 | 0.7 | 0, 5 | 0.8 |
| Tibia | 1.0 | 1.9 | 1.3 | 2.2 |
| Metatarsus | 1.7 | 2.6 | 2.1 | 2.7 |
| Tarsus | 0.6 | 1.3 | 0.7 | 0.9 |
| | | | - | |
| Total | 5.7 mm. | 9.4 mm. | 6.9 mm. | 9.7 mm. |

that are most lateral in position are very close, with one being ventral to the other. Thus from a dorsal view the formula appears to be: 2:1:2. All areas of the dorsum with scattered heavy tubercles. Some tubercles larger than others, but none so large as to be paired median ones. Fifth area and each free tergite with a transverse row of tubercles. Median tubercle of the third free tergite enlarged into a median spine. First area of the dorsum without a median line. Lateral margins of the scute with scattered small tuberculations. Anal operculum with tuberculations, one of which is enlarged into a median tubercle. Free sternites each with a transverse row of granulations. Venter and coxae with scattered granulations which are enlarged into tubercles on the dorsal and lateral portions of the fourth coxa. Spiracle hidden by projections from the fourth coxa, a distal spine present on the second coxa.

Legs armed with only very small granulations, otherwise nearly smooth. Tarsal segments: 4-8-5-6. Distitures of first tarsus with only two segments, second with three. Third and fourth tarsi without scopulae or false claws, claws smooth.

Palpus: trochanter, 0.2 mm. long; femur, 0.7; patella, 0.5; tibia, 0.4; and tarsus, 0.4. Total length, 2.2 mm. Palpus armed retrolaterally as in figure 6. Prolaterally armed as follows: femur unarmed; patella with two small tubercles; tibia and tarsus armed as in retrolateral view.

Chelicera with scattered hairs. Dorsal elevation on the first segment with tuberculations.

Dorsum dark brown, mottlings lighter. Venter and coxae light reddish brown, appendages dusky, mottled. Trochanters and bases of femora very light.

Type Locality: Anjo Peninsula, coast of Western Australia, February 14, 1945 (B. Malkin). The collection was made 10 miles west of the estuary of the King Edward River under a piece of cardboard in a dry open woods of Eucalyptus.